

Remarks

1. Amendments to claims

By the present amendment, claims 1, 3, 13, and 22-24 have been amended, and new claims 25-30 have been added.

Upon entry of the present amendment, claim 1-7, 9, 11-13, 15-16, and 18-30 will be pending in the application.

The coating amount of a gelling agent is supported in the specification on page 103, lines 22-25 to page 104, line 1. The coating amount of a gelling accelerator is supported in the specification on page 106, lines 3-7.

2. Comments

Paragraph 2 : Request for correction

The specification was objected to as failing to provide proper antecedent basis for the term "water-soluble gelling agent" in claims 1, 3, 13 and 22. Applicants respectfully submit that present amendment has overcome this objection.

Paragraph 4, 6 : Rejection of claims 1-7, 9-13, 15-24 under 35 U.S.C.112, first paragraph and second paragraph

Claims 1-7, 9-13, 15-24 were rejected under 35 U.S.C.112, first paragraph, as failing to comply with the written description requirement. Applicants respectfully submit that present amendment has corrected any problems with associated with 35 U.S.C.112, first paragraph and second paragraph.

The Examiner also objects to the expression "an aqueous solvent of water or a mixture of water and 70% by weight or less of water-miscible organic solvent" in that it is unclear with respect to the percentage basis thereof. The expression indicates two alternatives: water or water + water-miscible organic solvent. In the case of water + water-miscible organic solvent, the water-miscible organic solvent is contained at 70%

by weight or less with respect to the water component.

Paragraph 9 : Rejection of claims 1-7, 9-13, and 15-24 under 35 U.S.C. 102(b), or 103(a)

Claims 1-7, 9-13, and 15-24 were rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Oya et al. (US 2001/005319).

Oya (2001/51319A1) discloses metal ions selected from Ca, Mg, Zn and Ag in column 33, [0073]. These metal ions are added to the non-photosensitive silver salt of an organic acid. The metal ions are added at an amount of 10^{-3} to 10^{-1} mole per one mole of non-photosensitive silver salt of an organic acid to modify the non-photosensitive silver salt of an organic acid. Oya discloses in page 50, paragraph [0266], a deionized gelatin containing Ca^{2+} ion at a content of 0.6 ppm in an undercoat layer. A deionization of gelatin means to remove ions from gelatin which contains naturally a tiny amount of ions from raw materials, and a degree of the deionization is usually represented by a content of Ca^{2+} ion.

The gelation accelerator in the present invention is added at a coating amount of 0.1% by weight to 200% by weight with respect to the gelling agent to accelerate the gelation reaction by the gelling agent in the outermost layer.

Oya does not teach or suggest the gelation accelerator in the present invention. In contrast, Oya discloses a thickener on page 40, paragraph [0167]. The thickener is used to increase a viscosity of a coating solution to 1-200 cp, or preferably 5-100 cp higher than the initial viscosity of the coating solution. The thickener is fundamentally different from a gelling agent or a gelling accelerator in its function.

The preparation process of the photothermographic material of the present invention comprises coating a coating solution followed by drying the coating solution. The gelling agent and the gelling accelerator in the present invention cause the loss of fluidity of the coating solution upon a decrease in temperature following coating.

The thickener of Oya must be contained in the coating solution to achieve its

function. In contrast, the gelling agent and the gelling accelerator of the present invention do not need to be contained in the coating solution, but may be contained in the adjacent layers to react before drying after coating of the coating solution.

The gelation in the present invention is explained in page 42, lines 21-25 to page 44, lines 1-12:

“By gelation, the layer formed by coating loses fluidity, so the surface of image forming layer is hard to be effected by air for drying, at the drying step after coating step, and the photothermographic material with uniformly coated surface can be obtained.

Herein, it is important that a coating solution does not been gelled at a coating step. It is convenient for operation that the coating solution has fluidity at the coating step and loses fluidity by gelation before the drying step after coating step.

Viscosity of the said coating solution at a coating step is preferably 5 mPa·s to 200 mPa·s, more preferably 10 mPa·s to 100 mPa·s...

Though it is difficult to measure the viscosity of formed layer at the time before the drying step and after coating step (at this point, the gelation occurs), it is guessed that the viscosity is almost 200 mPa·s to 5,000 mPa·s, preferably 500 mPa·s to 5,000 mPa·s...

The temperature of coating solution at coating step is not specifically limited as far as the temperature is set higher than a gelation temperature, and the cooling temperature at the point before drying step and after coating step is not specifically limited as far as the temperature is set lower than a gelation temperature.”

Therefore, Oya does not teach or suggest the present invention, and it is respectfully requested that this rejection be withdrawn.

Paragraph 10 : Rejection of claims 1-7, 9-13, and 15-24 under 35 U.S.C.103(a)

Claims 1-7, 9-13, and 15-24 were rejected under 35 U.S.C. 103(a) as being unpatentable over Oya in combination with Derwent 1982-8459E and Andrews '854.

Oya does not disclose the combination of the gelling agent and the gelling accelerator as required by the instant claims, as discussed above. Derwent 1982-8459E is related to an adhesive for corrugated cardboard, and Andrews '854 is related to chemicals for preventing mastitis. As Derwent 1982-8459E and Andrews '854 are not in the field of the present invention nor are directed to solving the same problem as present invention, it would have not been obvious for a worker ordinary skilled in the art to combine Oya and Derwent 1982-8459E and Andrews '854. Even if such references could be combined, they still fail to teach the combination of gelling agent and gelation accelerator as in the present invention.

In view of the foregoing amendments and remarks, it is respectfully submitted that all of the pending claims are in condition for allowance. Favorable action is respectfully requested.

Respectfully submitted,



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